

Appln Serial No. 09/661,920

September 14, 2000

Page 4

that fluid may flow through the structure from one surface to other only in the porous regions. This is unlike the cited reference which does not teach forming a porous structure and then selectively rendering certain portions non-porous. Rather it starts with a non-porous base layer adds certain areas on top of it that are porous strands and then renders certain portions non-porous.

Claims 2-4, 9 and 14-24 have been rejected under 35 USC 102(b) over EP 272 043.

Applicant disagrees.

The reference teaches a composite membrane formed of three layers, at least two of which are "porous" or "very porous" (see Column 7, lines 11-15). This membrane is attached to a bottom of a preformed well. The composite membrane layers are a reaction layer, a sealing layer and a barrier layer.

The cited reference is silent on any porous structure having non-porous areas formed in it as is required by the present invention. It does not teach or suggest rendering a portion of one layer of porous material non-porous so as to have a structure in one layer that has porous and non-porous regions in it.

The reference clearly states that the sealing layer is a porous material and that it relies instead on the liquophobicity of the material to form isolated porous areas (liquophobic being defined in the reference at Column 7, lines 18-21 as having "a critical surface energy lower than the surface tension of the applied liquid and not readily or spontaneously wetted by the applied liquid(s)").

Applicant wishes to point out that Column 8, lines 33 - 36 states that the barrier layer may be microporous or nonporous. However, even in the case when the barrier layer is non-porous, the entire layer is nonporous, not just a section of it.

Moreover, the wells are an integral part of the device. There is no disclosure to the effect that the composite membrane can exist independently of the wells as the membrane is only taught as being attached to the wells. Even it could exist independently, there is no patterned membrane as taught in the present invention.

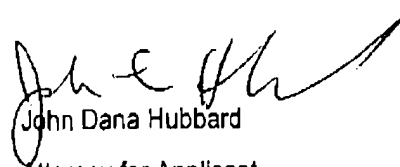
Appln Serial No. 09/661,920
September 14, 2000
Page 5

Claim 4 has been rejected under 35 USC 103(a) over FR 2 233 626. As the reference fails to teach or suggest the formation of areas of non-porous material in a porous membrane, it would not have been obvious from the reference to then form those areas into particular claimed shapes or configurations. The reference only teaches or suggestions using a rigid plate which creates a temporary porous area by blotting out the rest of the still porous membrane with its closed mass. There is no teaching or suggestion a fused, non-porous areas being formed in the membrane structure. As such, the present claim would not have been obvious from the reference.

The above amendment is believed to respond fully and completely to all issues raised in the office action and place the claims in condition for allowance. The Examiner is invited to call the Attorney of record at the phone number below if any further issues need to be addressed before allowance of the claims.

Attached is a page entitled Version Marked to Show Changes.

Respectfully Submitted,


John Dana Hubbard
Attorney for Applicant
Reg. No. 30, 465

March 24, 2003
Millipore Corporation
290 Concord Road
Billerica, Massachusetts 01821
Tel.: (978) 715-1265
Fax: (978) 715-1382

CERTIFICATE OF MAILING

Appln Serial No. 09/661,920
September 14, 2000
Page 6

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Assistant Commissioner of Patents, Washington D.C. 20231

On March 24, 2003

Signature

Kimberly Atwood

Typed name of person signing

APPLICANT: Wilson Moya

SERIAL NO.: 09/661,920

FILED: September 14, 2000

EXAMINER: Hai Vo

TITLE: Patterned Porous Structures

GROUP ART UNIT: 1771

Version Marked to Show Changes Made**In The Specification:**

Paragraph beginning at line 8 of page 6 has been amended as follows:

In Figure 1 is shown as first embodiment of the present invention. As shown, there is a structure, in this case a porous [porous] structure 1 that has one or more areas of porous materials 2 and one or more reduced porosity or non-porous areas 3. In this arrangement, the reduced porosity or non-porous areas 3 are formed as a series intersecting lines that form a series of square grids, the interior of each square are formed of porous material 2. While the affected areas are described as [as] being of reduced porosity or being non-porous, it is preferred that they be essentially non-porous, e.g. that liquids do not easily or normally flow through these areas as compared to the flow obtained in the porous areas. Such gridded porous structures are useful in many applications such as in the analysis of microbes in fluids such as water, beverages, pharmaceuticals and other liquids. Likewise, the gridded pattern can serve as "reinforcing structures" to improve the strength or handling characteristics of an otherwise weak unsupported membrane such as an unsupported ultrafiltration membrane or a cellulosic membrane.

Abstract beginning at Page 20 has been amended as follows:

- The present invention is a porous structure formed with areas of porous material and areas of reduced porosity or non-porous material. Preferably, the structure is formed in the arrangement of a desired pattern of porous and reduced porosity or non-porous areas. The patterned structure is formed through the collapse of selected portions of the porous structure in the shape of the desired pattern to render these portions of reduced porosity or non-porous while the remaining portions of the structure remain porous. The use of heat and/or pressure is preferred to collapse the selected areas. The collapse may be aided by the use

of a softening solvent or solvent/non-solvent mixture. The process can be applied to any polymeric porous structure of any pore size such as ultrafiltration or microfiltration, made by any process such as by track etch, stretching, casting, sintering or extrusion. In addition, it may be used with woven or nonwoven fabrics. []The porous /reduced porosity or non-porous structure may be used alone or in conjunction with other layers, such as additional layers of porous structures, porous support layers, any of which may either containing corresponding porous/reduced porosity or non-porous regions or not, or reduced porosity or non-porous support layers such as films or plastics, which may having openings corresponding to the porous regions of the structure such as multiple well plates or cards.

In The Claims:

Claim 13 has been amended as follows:

13. (Amended) A patterned porous structure comprising one or more layers of a porous structure having one or more areas of porous material and one or more areas of reduced porosity or non-porous material [The patterned structure of claim 2] wherein the porous structure is formed of two or more layers and each of the layers have one or more areas of porous material and one or more areas of reduced porosity material formed therein and the areas of porous and reduced porosity material vary from layer to layer.